

## CLAIMS

1. An isolated antibody or a fragment thereof that binds to an epitope present in the transmembrane domain of polycystin and specifically recognizes a polycystin-related polypeptide having an apparent molecular weight in the range of about 600 to about 800 kD.
2. An isolated antibody of claim 1, wherein the polypeptide has an apparent molecular weight of about 600 kD.
3. An isolated antibody of claim 1, wherein the polypeptide has an apparent molecular weight of about 800 kD.
4. An isolated antibody comprising an epitope, wherein the epitope comprises a peptide having amino acids as shown in Figure 1 (SEQ ID NO:2) selected from the group consisting of amino acid residues 2621 to 2710, amino acid residues 2734 to 3094, amino acid residues 3116 to 3300, amino acid residues 3364 to 3578, amino acid residues 3623 to 3688, amino acid residues 3710 to 3914, amino acid residues 3931 to 4046, amino acid residues 2166 to 2599, amino acid residues 4097 to 4302, amino acid residues 4148 to 4219, amino acid residues 4220 to 4302, amino acid residues 27 to 360, amino acid residues 843 to 1200, amino acid residues 1205 to 1625, and amino acid residues 1626 to 2136.
5. An isolated antibody or a fragment thereof that specifically binds to the transmembrane domain of an integral membrane protein that is associated with polycystic kidney disease, wherein the integral membrane protein also binds to a reference antibody selected from the group consisting of anti-FP-L1, anti-FP-L2, anti-FP-L3, anti-FP-L4, anti-FP-L5, anti-FP-L6, anti-FP-L7, anti-MAL-REJ antibody, anti-MAL-BD3 antibody, anti-FP-46-2 antibody, anti-FP-46-1c antibody, or anti-FP-LRR antibody.

25 13. A recombinant polypeptide comprising a polypeptide fragment of  
polycystin, wherein the fragment comprises a peptide having amino acids as  
shown in Figure 1 (SEQ ID NO:2) selected from the group consisting of amino  
acid residues 2621 to 2710, amino acid residues 2734 to 3094, amino acid  
residues 3116 to 3300, amino acid residues 3364 to 3578, amino acid residues  
30 3623 to 3688, amino acid residues 3710 to 3914, amino acid residues 3931 to

4046, amino acid residues 2166 to 2599, amino acid residues 4097 to 4302, amino acid residues 4148 to 4219, amino acid residues 4220 to 4302, amino acid residues 27 to 360, amino acid residues 843 to 1200, amino acid residues 1205 to 1625, and amino acid residues 1626 to 2136.

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15. A composition comprising a carrier and a polypeptide of claim 13.

16. An isolated polynucleotide encoding the recombinant polypeptide of claim 13.

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17. A gene delivery vehicle comprising the polynucleotide of claim 16.

18. A host cell transformed with the isolated polynucleotide of claim 16.

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19. An isolated polypeptide having an apparent molecular weight in the range of about 600 to about 800 kD that specifically binds to an antibody or fragment thereof of claim 1.

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20. An isolated polypeptide of claim 19, wherein the polypeptide has an apparent molecular weight of about 600 kD.

21. The isolated polypeptide of claim 19, wherein the polypeptide has an apparent molecular weight of about 800 kD.

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22. A diagnostic kit for detecting a polycystin-related polypeptide present in a sample, comprising an antibody of any of claims 1 to 5, and instructions for the use of the antibody to detect the polypeptide.

23. A method for modulating cell-cell adhesion in a suitable tissue, comprising delivering to the tissue an effective amount of an agent that modulates the binding of polycystin in the tissue.

24. The method of claim 22, wherein the modulation of cell-cell or cell-matrix adhesion is a reduction of cell-cell or cell-matrix adhesion.

25. The method of claim 24, wherein the agent prevents or inhibits transcription and/or translation of a polycystin polypeptide in a cell.

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26. The method of claim 24, wherein the agent is an antisense polynucleotide to an isolated polynucleotide of claim 16.

27. The method of claim 24, wherein the agent is a ribozyme that  
15 inhibits translation of an isolated polynucleotide of claim 16.

28. The method of claim 22, wherein the modulation of cell-cell or cell-matrix adhesion is promotion or enhancement of cell-cell or cell-matrix adhesion in a suitable cell or tissue.

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29. The method of claim 28, wherein an effective amount of a polycystin Ig-like domain is delivered to the cell or tissue.